

Case 3332***Cercophonius brachycentrus bivittatus* Thorell, 1877 (currently *Orobothriurus bivittatus*; Arachnida, Scorpiones): replacement of the holotype by the designation of a neotype**

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Abstract. The purpose of this application, under Article 75.5 of the Code, is to replace the holotype of the scorpion *Cercophonius brachycentrus bivittatus* Thorell, 1877 (currently *Orobothriurus bivittatus*) from Argentina by the designation of a neotype. The taxonomic identity of *O. bivittatus* was recently assessed through hemispermaphore morphology, a feature present only in adult males. The holotype of *bivittatus* is a damaged juvenile, lacking definitive characters essential for specific identification within the genus *Orobothriurus*. It is proposed that all previous type fixations for *Cercophonius brachycentrus bivittatus* are set aside and a neotype is designated.

Keywords. Nomenclature; taxonomy; Arachnida; Scorpiones; BOTHRIURIDAE; *Orobothriurus*; *Orobothriurus bivittatus*; scorpions; Argentina.

1. Thorell (1877, p. 183) described the scorpion *Cercophonius brachycentrus* var. β *bivittatum* [recte *bivittatus*] (currently *Orobothriurus bivittatus*) from San Juan Province in Argentina. The species was largely neglected in the literature (see Acosta, 2002, 2005 for a historical account). Although Maury (1977) suggested it to be a junior synonym of *Bothriurus alticola* Pocock, 1899 (currently *Orobothriurus alticola*), until recently *bivittatus* was regarded as a subspecies of *Urophonius brachycentrus* (Thorell, 1877) (Lowe & Fet, 2000). Acosta (2002) accepted the synonymy of *Orobothriurus bivittatus* (Thorell, 1877) and *Orobothriurus alticola* (Pocock, 1899). Since the senior but little used name *bivittatus* took priority over the well known specific name *alticola*, Acosta (2002) also applied to the Commission to give *alticola* precedence over *bivittatus*, whenever these names are considered synonyms. The Commission approved this proposal (Opinion 2074, June 2004).

2. The holotype of *Orobothriurus bivittatus*, Naturhistoriska Riksmuseet, Stockholm, is a very small and poorly preserved juvenile, providing little information on the species identity. It is incomplete; only carapace, mesosoma and caudal segments I-IV remain together with the left pedipalp trochanter and femur, right I-II legs (I without telotarsus), and pectines; metasomal segment V and right pedipalp are loose; all remaining body parts or appendages are missing (Acosta, 2005).

3. The high altitude genus *Orobothriurus* is poorly known, with a presumed high degree of endemism in the Andes and Andes-related ranges (Acosta & Ochoa, 2001; Ochoa, 2004). The possibility of the existence of further species of this genus

(including better preserved specimens of *Orobothriurus bivittatus*) was already suggested at the time when the conditional precedence of *Orobothriurus alticola* over *O. bivittatus* was proposed (Acosta, 2002). The original details of the type locality of *Orobothriurus bivittatus* were imprecise (merely 'San Juan'), but through a careful analysis of all data available, including the report of the trip of the presumable collector of the holotype (Echegaray, 1878), Acosta (2005) was able to determine that the holotype of *Orobothriurus bivittatus* was most likely collected along the so-called 'camino del Tontal' ('Tontal road', province of San Juan, Argentina), which crosses the isolated range Sierra del Tontal at about 3600 m. One adult male of *Orobothriurus bivittatus* was subsequently collected at this site and described, providing for the first time relevant taxonomic information, especially on hemispermatochore morphology (Acosta, 2005). Acosta (2005) showed that *Orobothriurus bivittatus* is indeed a valid species, though very close to *O. alticola*. While the external morphology does not give any conclusive diagnostic feature, the hemispermatochore shows distinct differences between the two species (Acosta, 2005).

4. The taxonomic identity of *Orobothriurus bivittatus* cannot be adequately determined from the holotype, which is a poorly preserved juvenile, i.e. the name *bivittatus*, if based on this specimen, may be considered as a nomen dubium, thereby threatening the stability of the taxonomy of the genus *Orobothriurus*. On the other hand, the male specimen collected at Sierra del Tontal (Parque Nacional El Leoncito, near 'Portezuelo del Tontal' (3450 m), 25-xi-2003, L. Acosta coll.), displays definitive characters essential for specific identification within the genus. This specimen is stored at Colección Aracnológica, Cátedra de Diversidad Animal I, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de Córdoba, Argentina (CDA 000.364). Full details, especially conditions qualifying this material as neotype, are given in Acosta (2005).

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous fixations of the name-bearing type for *bivittatus* Thorell, 1877, as published in the trinomen *Cercophonius brachycentrus bivittatus*, and to designate as neotype male specimen CDA 000.364, in the Universidad Nacional de Córdoba, Argentina;
- (2) to emend the entry on the Official List of Specific Names in Zoology for *bivittatus* Thorell, 1877, as published in the trinomen *Cercophonius brachycentrus bivittatus*, to record that it is defined by the neotype designated in (1) above.

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